Claims 1-4, 9-12 and 17 were examined. All claims were rejected. In response to the above-identified Office Action, Applicant does not amend any claims, cancel any claims, or add any new claims. Reconsideration of the rejected claims in light of the following remarks is requested.

I.   Claims Rejected Under 35 U.S.C. § 102(b)

The Examiner rejected claims 1, 4 and 17 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,412,689 issued to Chan *et al.* (*"Chan"*). Applicant believes that *Chan*'s system is fundamentally different from that disclosed and claimed in the present application, and that the differences are properly captured in the pending claims.

Chan teaches a method of encoding binary data for transmission over a set of lines in such a way that crosstalk does not occur. Although the method may apparently be generalized to transmit an arbitrary number of bits, *Chan*'s discussion and the review here will consider the example of transmitting four bits over four lines. *Chan*'s hardware is capable of setting each of the lines to one of 4 non-zero signaling voltages: +8, +4, −4 or −8. The key feature of *Chan* is that, in order to transmit 4 bits during a signaling period, exactly one of the 4 lines is set to a non-zero voltage; the others are left at zero. This is shown in *Chan*'s matrix [2] at col. 5. Each of the sixteen columns corresponds to one of the sixteen possible combinations of 4 binary digits, while each of the 4 rows corresponds to one of the transmission lines. Assuming that the sixteen columns correspond directly to the sixteen binary numbers, transmitting the binary number 0000_b would entail setting the first line to +4 while leaving the remaining three lines at 0. To transmit 0010_b, the second line might be set to +8 and the remaining lines left at 0. The receiving circuitry determines which transmission line is non-zero and distinguishes between the 4 voltage levels that might be present, and reconstitutes the 4 transmitted bits from that information.

The crucial point about *Chan*'s system (at least for the purpose of determining whether *Chan* anticipates Applicant's claims) is this: a signal voltage on a particular line *does not* correspond directly to the value of one transmitted bit. This is evident from at least two lines of reasoning: first, each transmission line can take on one of four non-zero values. That is three more values than necessary to represent a single binary number. If the extra signal values are not simply redundant, then they must encode information from more than one bit. Second, only one transmission line takes on a non-zero value during the transmission of a 4-bit datum. If each line corresponded directly to only one bit, then only the four binary values 0001_b, 0010_b, 0100_b, and 1000_b could be transmitted. Clearly, the information contained in the 4 bits to be transmitted is separated from the 4 bits themselves, divided between the multiple signal levels and the choice of which transmission line to place that signal on, and transmitted in that alternate form. Consequently, the receiver cannot recover the transmitted information without reference to *all* of the transmission lines.

As to claim 1, that claim recites an apparatus to communicate a set of data symbols comprising a number of elements, wherein a receiver provides an estimate of one of the data symbols based on a signal received over one of the transmission lines, independently of the other signals transmitted on other transmission lines. In contrast, *Chan*'s receiver *cannot* reconstruct a single data bit independently from the state of a single transmission line – if the line is non-zero, it might have any one of four values, while if it *is* zero, then there is no way to distinguish the twelve possible configurations (exactly one of the other three lines has one of the four possible non-zero values). For at least these reasons, Applicant respectfully submits that *Chan* fails to anticipate claim 1, and requests that the rejection be withdrawn.

As to claim 4, that claim depends upon claim 1, and is patentable for at least the reasons discussed in support of its base claim. Applicants request that the Examiner withdraw the rejection of claim 4 as well.

As to claim 17, that claim recites a method to provide crosstalk equalization comprising a number of operations, including receiving a set of signals by a set of

receivers $r(i)$, wherein each receiver estimates the data symbol $d(i)$ based upon the signal $x(i)$ it receives from transmission line $l(i)$ independently of the signals that are transmitted on other transmission lines. As Applicant has discussed at length above, *Chan's* receiver cannot estimate a data symbol based upon the signal it receives from one transmission line independently from the signals on the other transmission lines because the information contained in a data symbol is not transmitted independently over just one line, but rather combined with the information contained in the other symbols and transmitted as a polyvariate voltage level on exactly one of the transmission lines. For at least those reasons, Applicant believes that *Chan* does not anticipate claim 17, and requests that the rejection thereof be withdrawn.

II. Claims Rejected Under 35 U.S.C. § 103(a)

The Examiner rejected claims 2, 3 and 9-12 under 35 U.S.C. § 103(a) as unpatentable over *Chan (supra)*. Claims 2 and 3 depend upon claim 1, which was shown to be distinguishable from the prior art of record, and for at least the reasons discussed above, the rejections of these claims should also be withdrawn.

As to claim 9, that claim recites a computer system comprising a number of components, including a set of receivers, each connected to a transmission line to receive a signal, and wherein each receiver provides an estimate of a transmitted data symbol based upon the signal it receives, independently of the signals transmitted over the other transmission lines and received by the other receivers. For reasons similar to those discussed in regard to claims 1 and 17 (namely, that *Chan's* receiver cannot provide an estimate of a transmitted data symbol based on the signal it receives over one transmission line), Applicant respectfully submits that claim 9 is not obvious in view of *Chan*. The Examiner is requested to withdraw this objection.

As to claims 10-12, those claims depend upon claim 9 and are patentable for at least the reasons discussed in support of that claim. Applicant respectfully requests that these rejections be withdrawn.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-4, 9-12 and 17, patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

Respectfully submitted,

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Dated: _____, 2005 _____

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